By the similar separation of the second group of alkaloids, in addition to the alkaloids (I) and (III)-(VI) we obtained a base (VIII) with mp 235-237°C (ethanol, with foaming) and a base (IX) with mp 206.5-207.5°C (acetone). The properties of base (VII), having the composition $C_{19}H_{23}NO_4$, M^+ 329, $[\alpha]_D$ +20, (c 0.43; ethanol) were identical with those of the benzyltetrahydroisoquinoline alkaloid reticuline. A direct comparison of (VII) with an authentic sample of the alkaloid isolated from *Berberis integerrima* Bge. [4] showed their identity.

This is the first time that reticuline has been isolated from plants of the genus *Aconitum*.

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ALKALOIDS OF THE NARCISSUS VARIETY FORTUNE

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Continuing the search for new sources of galanthamine among plants of the family Amaryllidaceae we have investigated the leaves of the narcissus of the Fortune variety, which belongs to the group of large-corona narcissuses of garden origin *Narcissus hybridus* hort. and grows in the Pervomaiskii sovkhoz [state farm], Moscow province.

Analysis of the material showed that the leaves collected in the period of mass flowering contained a total of 0.93% of bases (chloroform extraction). By chromatographing the combined alkaloids on a fixed layer of KSK silica gel + 2% of Na_2CO_3 in the chloroform—ethyl acetate—methanol (2:2:1) system, three main alkaloids were found with R_f 0.25, 0.46, and 0.56. The amounts of the individual alkaloids determined by the chromatophotocolorimetric method were, respectively, 0.17, 0.14, and 0.27% on the weight of the dry leaves.

The alkaloid with R_f 0.46, isolated from an acetone solution of the combined alkaloids in the form of the hydrobromide, was identified as galanthamine from its IR, UV, and NMR spectra and from the melting points of the base and its hydrobromide, and also by mixed melting points [1-4].

The addition of concentrated hydrochloric acid to the mother solution after the separation of galanthamine hydrobromide yielded the hydrochloride of an alkaloid with mp 208-209°C (ethanol), R_f 0.25. The base $C_{16}H_{19}NO_3$ obtained from the hydrochloride has mp 160-162°C (methanol) $[\alpha]_D^{20}$ +66.7° (c 0.23%, ethanol), mol. wt. 273 (mass spectrum). UV spectrum: λ_{max} 285 nm (log ε 3.53); shoulder λ 226 nm (log ε 3.79). The ^1H NMR spectrum (100 MHz, $CDCl_3$) contained the signals of an aromatic methoxy group (3.75 ppm), of a vinyl proton (5.50 ppm), of two aromatic protons in the form of singlets (6.45 and 6.78 ppm), of two hydroxylic protons (5 ppm), and of the proton of a $\mathrm{H}\overset{|}{\underset{|}{\mathrm{C}}}\mathrm{O}-$ grouping (4.23 ppm). The compound gave a blue-violet coloration with ferric chloride and consequently had a phenolic hydroxyl. The absence of a N-methyl group and also of vinyl protons in the vicinal position to one another permitted the assumption that the compound isolated was of the lycorine type. The presence in the mass spectrum of the peaks of the ions M^+ 273, 272 (100%) and 228, 229 was also characteristic for alkaloids of the lycorine group [5, 6].

The alkaloid with R_f 0.56, $C_{17}H_{19}NO_4$, isolated by the chromatography of the evaporated mother solutions (after the removal of the alkaloids with R_f 0.46 and 0.25) on alumina (with benzene as the eluent) — with mp 203-204°C (methanol); mol. wt. 301 (mass spectrum); UV spec-

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trum: λ_{max} 295 nm (log ε 3.75), shoulder at λ 237 nm (log ε 3.51) — was identified as hemanthanine from its mass and NMR spectra [7-10].

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ALKALOIDS OF *Veratrum dahuricum*

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Together with the ester-alkaloids protoverine and germine [1], the combined alkaloids obtained by the ether extraction of the epigeal part of *Veratrum dahuricum* (Turcz.) Loes., have yielded alkaloids with R_f 0.18 (I), 0.22 (II), and 0.36 (III) (system 1 — chloroform saturated with formamide; Leningrad type M [slow] paper impregnated with formamide), 0.31 (IV), 0.43 (V), 0.7 (VI), and 0.73 (VII) (system 2 — chloroform—benzene (1:2) saturated with formamide).

Alkaloid (I) — $C_{27}H_{43}O_2N$, mp 239-241°C (ethanol), $[\alpha]_D^{22}$ +18° (c 0.41; ethanol). The UV spectrum of the alkaloid in concentrated sulfuric acid (0.37 mg in 10 ml) obtained 24 h after dissolution [2] had λ_{max} 250, 323, 444, 504 nm. The R_f value of the alkaloid coincided with that of rubijervine, and a mixture of the compound with rubijervine gave no depression of the melting point.

Alkaloid (II) — $C_{27}H_{43}O_3N$, $[\alpha]_D^{21}$ —85, (c 0.43; chloroform). Amorphous. The UV spectrum of the substance in concentrated sulfuric acid (0.4 mg in 10 ml taken by Bondarenko's method [2] two hours after dissolution had λ_{max} 264, 389, 472, 523 nm. The R_f value of the substance coincided with that of a sample of veramarine.

Alkaloid (III) — $C_{36}H_{51}O_{10}N$, mp 270-272°C (chloroform). $[\alpha]_D^{23}$ 27.1° (c 0.34; chloroform). The UV spectrum of the alkaloid (0.14 mg in 10 ml of concentrated sulfuric acid) had λ_{max} 229, 322, 411, 487 nm. The products of alkaline hydrolysis [3] were shown by paper chromatography to contain the amino alcohol zygadenine [butanol-1-ol—acetic acid—water (4:1:5) system] and veratric acid [butan-1-ol—1.5 N aqueous ammonia (1:1) system]. The R_f value of the compound coincided with that of veratroylzygadenine; a mixture of the alkaloid with an authentic sample gave no depression of the melting point.

Alkaloid (IV) — mp 345-247°C (ethanol), $[\alpha]_D^{21}$ —167° (c 0.30; chloroform). The UV spectrum in ethanol had λ_{max} 250, 360 nm, and the spectrum in concentrated sulfuric acid λ_{max} 282, 313, 405, 480 nm. Its R_f value coincided with that of jervine; a mixture showed no depression of the melting point.

Alkaloid (V) — mp 237-238°C, $[\alpha]_D^{20}$ +7° (c 0.60; ethanol). The spectrum of the compound in concentrated sulfuric acid had absorption maxima at 247, 323, 409, and 504 nm. The R_f value of the alkaloid coincided with that of isorubijervine, and a mixture gave no depression of the melting point.

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